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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,695	11/03/2006	Michael J O'Donnell	16-589P/US	2008

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EXAMINER	
SAVANI, AVINASH A	

ART UNIT	PAPER NUMBER
3749	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,695	O'DONNELL ET AL.	
	Examiner	Art Unit	
	AVINASH SAVANI	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/3/2006, 6/14/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 13, 20, 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Sen-Yu [6659765].

3. With respect to claims 1, 13, 20, 24 and 25, Sen-Yu discloses: A gas burner (10) comprising: a) a burner body (12) including: i) a lower housing (22); ii) an element defining a combustion surface (26) attached to said lower housing; iii) a diffuser/reflector (80) positioned below said element [see FIG 2]; b) an inlet conduit (14) communicating with said burner body through which a gas/air mixture is delivered to said burner body in a region located below said diffuser/reflector [col 2, line 67, col 3, line 1-4]; and, c) said diffuser/reflector including a plurality of openings (87), each opening having an overhanging guide plate (86) Sen-Yu discloses an improvement on infrared gas burners, commonly known for combusting fuel/air mixtures, wherein it is seen in figure 1 that the burner body is substantially rectangular in shape. Also, referring to figure 4, the profile demonstrates a stepping orientation.

4. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Johnson [3312269].

5. With respect to claim 5, Johnson et al discloses: A gas burner (12) comprising: a) a burner body (10) including: i) a lower housing [see FIG 1]; ii) an element defining a combustion surface (14) attached to said lower housing; b) an inlet conduit (16) communicating with said bumer body through which a gas/air mixture is delivered to said burner body in a region located below said combustion surface defining element [col 6, line 4-7]; and, c) said combustion surface defining element being radiused and including a plurality of integrally formed rigidizing ribs (22) [see FIG 1].

6. Claims 15 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by McCall [6439171].

7. With respect to claims 15 and 27, McCall discloses: A gas burner for use in a water heater, said water heater including a wall at least partially defining a combustion chamber and an access opening in said wall, comprising: a) a burner body including a lower housing and an element defining a combustion surface (28) that is attached to said lower housing [see FIG 2]; b) an inlet conduit (22) communicating with said burner body through which a gas/air mixture is delivered to said burner body in a region located below said combustion surface defining element [col 3, line 41-45]; and, c) an access door/bulkhead (10) for closing off said access opening when said burner is in its installed position within said water heater, said access door secured to an inlet end of said inlet conduit [col 3, line 33-37]; d) said inlet end of said inlet conduit including an upset ridge (18) that abuts an inside surface surrounding an opening in said door through which said inlet conduit extends and an outwardly extending flare that abuttably

engages an outside surface of said door, whereby said door is secured to said inlet conduit [see FIG 3, col 4, line 11-21].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sen-Yu ['765], further in view of Rodgers et al [5520536].

10. With respect to claims 2-4, 21-23 and 26 Sen-Yu discloses the burner of claim 1, wherein the diffuser (80) is arranged in parallel and is understood to be formed of a stamped process, as this is a common process for shaping sheet metal. Sen-Yu however does disclose a sets of these openings, V-shape/arcuate of the diffuser/reflector, or a second plurality of openings not paired with the guides that are located in another region of the structure, forming unobstructed flow paths. Rodgers et al teaches a similar device wherein there are multiple sets of openings (34) lacking guides on an inverted V-shaped/arcuate diffuser (30) [see FIG 2]. In view of Rodgers et al, the holes allow for a gas mixture to be distributed to a burner surface [col 4, line 16-23]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the diffuser/reflector with an inverted V shape and a second plurality of openings because the design was known in the art to allow for a proper distribution of a fuel, yielding the predictable result of optimum burner performance. Referring to figure

2 and 6, Sen-Yu displays an end of the deflector that has no apertures located in a region remote from the inlet.

11. Claims 11 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Sen-Yu ['765], further in view of Kaneko [JP60175913].

12. With respect to claims 11 and 12, Sen-Yu discloses the burner as claimed, having an inlet conduit (14) extending into an interior region of the body [see FIG 1], however does not disclose the discharge end being cut at an angle of 45°. Referring to the figure in the Japanese patent to Kaneko, it is seen that the inlet tube (3) has a discharge that is cut at a 45° angle. In view of Kaneko, the gas inlet tube has an angled discharge end. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have a discharge end angled because the design was known in the prior art.

13. Claims 6-10, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson ['269], further in view of Rodgers et al ['536].

14. With respect to claims 6-10, Johnson discloses the burner as claimed with a lower housing [see FIG 1] however does not further clarify the design of the lower housing. Rodgers et al teach a similar burner that describes the lower housing (22) as fully claimed [see FIG 2]. As can be seen from figures 2 and 3, the lower housing (22) has flanges (44) that receive an edge of the burner surface (62), thereby securing the two elements, the flanges are oriented in a tangential relationship, the lower housing has a channel member that has upwardly directed sides (26) wherein these flanges define an upper edge, wherein the lower housing has end caps (48) having arcuate

flanges [see FIG 2] securing the combustion surface [see FIG 3], and the end cap has an aperture (14) for receiving an inlet conduit. The end cap also has the axial flange capable of securing the inlet tube. The inlet tube of Johnson is seen to be tightly fit within the burner body, thereby implying a securing means on the tube that engages the flanges of the lower body. In view of Rodgers et al, the housing of the burner body has means for securing elements of the burner together. It would have been obvious to a person of ordinary skill in the art at the time of the invention to arrange the housing as claimed because the design was known to one of ordinary skill, showing a common design choice and yielding the predictable result of a leak proof burner body.

15. With respect to claim 14, Johnson discloses s combustion surface (14) comprising a screen [see FIG 1], however does not disclose the specific material of the screen. Johnson does teach the sheet material of high temperature and thermal conductivity [col 1, line 40-55]. Johnson teaches of various alloys that form a weave/grid structure. In view of Johnson, the combustion surface has the same capabilities of the steel alloy wire cloth. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the wire cloth because the knowledge of materials capable of sustaining high temperatures would be within their skill level, yielding the predictable result of choosing any alloy capable of the required characteristics to provide a suitable combustion surface.

16. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCall ['171].

17. With respect to claims 17-19, McCall discloses the burner as claimed, however does not disclose the various design aspects as claimed in 17-19, which are deemed to be of design choice and not criticality since no advantage is given of the design choice. There is a mounting structure that attaches a gas orifice that is distanced away from the inlet end of (22) (refer to the attachment means of the tubes making up the conduit 22), and it is seen that a predetermined shape is used for the mounting of the conduit to the door. There is a gasket (32) used to mount the door assembly that forms a part of the burner body, and the use of flanges would allow for a same sealing means. It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide such as design, because similar arrangements were used thereby demonstrating design choice, not one of criticality.

18. Claims 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCall ['171], further in view of Joyce [5340305].

19. With respect to claims 28-32, McCall discloses the gas burner as claimed, however does not disclose various design features of the element. Joyce teaches a similar burner with the components as claimed making an obvious combination of elements. Joyce teaches a burner (1) having an inlet conduit (3) wherein the upset ridge is present and is understood to be the area from which the flare (12) extends [see FIG 1]. The mounting structure (11) has legs and secures an end of the inlet and has a mounting structure for a gas orifice (10) and has an extending lip that is understood to be analogous to the deflecting tab. McCall discloses the rodent shield as can be seen in the figures. In view of Joyce, the burner has mounting means for a gas orifice and a

mounting means to mount the inlet to a door structure. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have such an arrangement because it was known that the mounting means would allow for proper installation of the components of the burner to the water heater.

20. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCall ['171], further in view of Rodgers [5791298].

21. With respect to claim 27, McCall discloses the burner of claim 27, except does not disclose a combustion chamber including ports for admission of secondary air. Rodgers et al teaches a similar device wherein the combustion chamber (20) has secondary ports (49) for the admittance of air into the combustion chamber [col 5, line 29-39]. In view of Rodgers, there is a means for additional air into the combustion chamber. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have a combustion chamber with secondary airports because the technique to do so was known, yielding the predictable result of an additional supply of combustion air to provide a more efficient burner and prevent vibrations due to pressure build up.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Friday, alternate Fridays off, 7:30-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Avinash Savani/
Examiner, Art Unit 3749

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749

/A. S./
11/18/2008